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ABSTRACTS OF TUBERCULOSIS

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Red-Cell Sedimentation Reaction.—This study is based on observations made on 19 healthy and 150 tuberculous individuals. More than 350 tests were done. *Conclusions: 1:* A normal sedimentation rate never excludes tuberculosis; the majority of non-progressive cases and many of the progressive form present normal values for the sedimentation rate. *2:* The sedimentation rate is lower in cases with light tuberculous infection and in cases receiving artificial pneumothorax. In the latter the sedimentation rate is in proportion to the efficacy of the collapse. No distinction as to sedimentation rate can be made between the various forms of tuberculosis and the various types of pneumothorax. Excessive value cannot be given to this test as has been done by other observers. If a diagnosis of a certain clinical form of tuberculosis is made by physical signs, roentgenologically, and by isolation of tubercle bacilli, the sedimentation rate may serve only to confirm the diagnosis. If the findings in regard to the sedimentation rate do not correspond to the clinical diagnosis as made by the above findings, the diagnosis must not be changed. *3:* The sedimentation rate undergoes modification parallel to the changes in the general condition of the patient. There are many exceptions to this, however. This parallelism was not regularly observed in patients treated with Sanocrysin.—*La reazione di belocita di sedimentazione degli eritrociti nella tubercolosi, S. Sticotti, Tubercolosi, September, 1927, xix, 331.*—(*U. E. Z*).

Pipette Method for Red-Cell Sedimentation Test.—A new technique is described for performing the blood sedimentation test, requiring a quantity of blood that is easily obtained by puncture of the finger tip, thus doing away with the necessity of venapuncture. This technique utilizes the graphic method of presentation previously developed and published by the author. Both pipette and tube methods were used upon 62 patients, the tube method serving as a control. All patients were afflicted with pulmonary tuberculosis. The results of the pipette method paralleled those of the tube method very closely, and the minor differences occurring here and there did not interfere with practical interpretation of the results.

A Finger Puncture Method for the Blood Sedimentation Test, J. Cutler, Am. J. M. Sc., May, 1927, clxxiii, 687.—(U E. Z.)

Periodical Fluctuations in Red-Cell Sedimentation Rate.—Studies were made on healthy persons to determine the relation of the sedimentation rate of the red cells to the motility of the stomach. The latter was determined by the manometric graphic method after the introduction into the stomach of a rubber balloon filled with water. *Conclusions:* In healthy persons the sedimentation rate varies very definitely in an individual manner. Periodical fluctuations are found coincident with the periodical activity of the stomach. In most cases an increase in the rate occurs in the middle and toward the end of the resting periods. A decrease occurs in the middle, and more frequently toward the end of the active periods, or in the beginning of the resting periods.—*Über periodische Schwankungen in der Senkungsgeschwindigkeit der Erythrocyten, W. Iwanow and I. Basilewitsch, Klin. Wchnschr., March 12, 1927, vi, 497.—(M. P.)*

Effect of Sanocrysin on Red-Cell Sedimentation Reaction.—Stimulated by the effects noted after the intravenous injection of Sanocrysin upon the red-cell sedimentation rate the authors studied the effects of metallic salts upon the sedimentation reaction. The addition of 0.5 to 1 mgm. Sanocrysin to 1 cc. of citrated venous blood from mainly tuberculosis cases which had not previously been treated with this same reagent showed a diminution in the sedimentation rate, over a period of 24 hours, of from 5 to 70 mm. *Triphal*, added to the blood of these cases, had no definite effect. There was partly an inhibition and partly a hastening. Krysolgan was more nearly related to Sanocrysin in inhibitory action. Upon the addition of a therapeutic dose both *Krysolgan* and *Triphal* were without action. Sanocrysin is by far the most active of the gold preparations. Sublimate and *Argochrom* always caused inhibition. *Electrocolargol* and neosalvarsan had no influence. The influencing of the sedimentation reaction *in vivo* after Sanocrysin injections is much more complicated, since the action of Sanocrysin is not only directly upon the blood, but the drug may also have an indirect action upon the organism as a whole. In 24 patients there was no effect during the first 24 hours, and only after a latent period did there occur an acceleration with small doses and a retardation with larger doses. The acceleration might be the expression of a focal and general reaction, while in case of a retardation a focal reaction alone occurred, to the exclusion of the general reaction. During the intervals between treatment there was usually an increase of the sedimentation rate. As a whole, there was a parallelism between the clinical picture and the sedimentation reaction after the use of Sanocrysin.—*Beeinflussung der Senkungsgeschwindigkeit der roten Blutkörperchen durch Sanocrysin. Untersuchungen in vitro und in vivo, G. Katz and M. Leffkowitz, Ztschr. f. Tuberk., 1926, xlv, 193.—(H. J. C.)*

Ocular Tuberculosis.—Three cases of tuberculosis of the chorioid and retina are reported. Each patient had a coexisting pulmonary tuberculosis, which was clinically inactive in one patient. This proves that haematogenous metastases may arise from nonprogressive foci. Tuberculin treatment is advised in the absence of active pulmonary tuberculosis.—*Drei seltene Fälle von Tuberkulose der Aderhaut und Netzhaut, H. Mayrhofer, Wien. klin. Wchnschr., September 22, 1927, xl, 1199.—(M. P.)*

Parinaud's Conjunctivitis.—This disease is characterized by a monocular inflammation in which the conjunctiva is bordered with a red and yellowish growth, sometimes pin-head size, transparent at first but becoming opaque and suggesting tuberculosis. The lids are swollen, thickened and hard, and the regional lymph notes (preauricular, submaxillary, cervical, supraclavicular, etc.) greatly enlarged and usually suppurating. The inflammation frequently extends to the face and neck, and after several weeks or months the entire reaction subsides rather promptly, leaving no scar. It is ushered in by systemic symptoms and fever. Histologically the nodules are found to be composed of densely packed endothelial phagocytes loaded with disintegrating chromatin granules. There is a good deal of cellular necrosis, the débris being mostly taken up by new cells so that the necrosis is not like that of tuberculosis. Some authors have reported it as being a mycotic disease due to a filamentous and others to a leptothrix microörganism. The large, irregular filamentous masses, 10 to 60 micra in diameter, described by Verhoeff and found lying within or near the areas of cellular necrosis, appear to be the true cause of the disease, although the microörganism does not produce disease when inoculated into animals. They have been found in the suppurating areas of the lymph nodes, and in one instance have been cultivated on artificial media. They can be detected only by very careful staining of smears or sections which is done as follows: *1:* Stain lightly in haemotoxylin and eosin, mount in

Canada balsam and examine under the microscope. Select only sections which show areas of endothelial phagocytosis. After five minutes or longer, remove cover slip by aid of heat, and wash off excess of balsam with xylol, chloroform, 95 per cent alcohol, and water. *2:* If a celloidin section, place on slide, wipe off excess of water. *3:* Stirling's gentian violet 12 minutes. *4:* Water. Remove from slide of celloidin section. *5:* Lugol's solution, 1:2:100, 20 seconds. *6:* Water. *7:* Ninety-five per cent alcohol in small dish 15 seconds. *8:* Oil of origanum in dish, 15 seconds. *9:* Ninety-five per cent alcohol 30 seconds. *10:* Oil of origanum. Place on slide and blot. *11:* Wash off thoroughly with xylol and blot. *12:* Xylol-balsam. In the case reported a piece of conjunctival tissue was examined. Frequently, what was thought to be leptothrix proved on closer examination to be degenerated elastic fibres. Pus from the swollen submaxillary node revealed a small gram-negative bacillus resembling *B. coli communis.* It grew on culture media.—*Parinaud's Conjunctivitis with Suppuration in the Preauricular, Submaxillary and Supraclavicular Glands, S. H. McKee, Canadian Med. Ass. J., August, 1927, xvii, 928.*—(*H. S. W.*)

Progressive Keratitis and Tuberculosis.—In *Perikeratitis progressiva* there occurs a concentric progressive corneal affection, with a severe and deeply seated scleritis predominantly affecting the anterior half of the bulb. The scleritis is primary. The present article, illustrated with six pictures, demonstrates the progression of the process. Four anatomical figures show an accumulation of lymphocytes and epithelioid cells in the episclera and in the bulbar connective tissue with oedema; there is a separation of Bowman's membrane and an infiltration of the upper layers of the cornea; there is an infiltration of the sclera as well as the uvea (to the equator); the nodular infiltration resembles phlyctenular processes, with transient nodules of lymphocytes and epithelioid cells. In the case reported there occurred a local and general reaction following tuberculin. The basic etiology still requires elucidation. —*Das Krankheitsbild der Sklero-Perikeratitis progressiva mit besonderer Berücksichtigung ihrer Beziehung zur Tuberkulose. Ein klinischer und histologischer Beitrag, A. v. Szily, Beitr. z. Klin. d. Tuberk., 1927, lxiii, 947.*—(*H. J. C.*)

Relation of Pulmonary and Laryngeal Tuberculosis.—This is a statistical study, dealing with 679 cases, and originating from a hospital in which all cases are studied regardless of the type or curability, and in which the diagnosis and treatment of larngeal tuberculosis was carried on by a nose, throat and ear specialist. It is concluded that the frequency of secondary laryngeal tuberculosis is dependent upon the infectious nature of the pulmonary discharge passing over the larynx, and that it is further dependent upon the severity of the pulmonary disease. There is a striking parallelism between the severity of the pulmonary disease and that of the complicating laryngeal tuberculosis. The prognosis is dependent upon the immunobiological condition of the entire body. When the pulmonary and laryngeal tuberculosis in the same case differed in severity, the final prognosis was determined by the pulmonary process. Permanent results in the treatment of laryngeal tuberculosis could only be expected when the coincident pulmonary disease was of a favorable type. In malignant pulmonary disease only symptomatic treatment of the larynx can be instituted.—*Über Beziehungen Zwischen Lungen- und Kehlkopftuberkulosen, Giercke, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 436.*—*H. J. C.*

Laryngeal Tuberculosis Complicating Pulmonary Tuberculosis.—Analysis of a large number of cases from the Vejlefjord Sanatorium and the Finsen Institute lead to the following observations: (1) laryngeal tuberculosis is a complication of advanced tuberculosis with cavitation, (2) there is no difference in incidence of the complication in the two sexes, (3) healing may occur in the presence of bacilli-bearing sputum, which speaks against the bronchiogenic origin of laryngeal tuberculosis; (4) larnygeal tuberculosis may be symptomless; (5) the prognosis of laryngeal tuberculosis is improved by thoracoplasty, showing how dependent the condition is on the state of the pulmonary lesion, (6) light combined with collapse therapy has proved efficacious; and finally, (7) the care of these cases calls for the best of coöperation between the phthisiologist and the laryngologist.—*On the Interrelation between the Laryngeal Complication and the Course and Treatment of Pulmonary Tuberculosis, J. Gravesen and F. W. Godbey, Tubercle, July, 1927, viii, 10.*—(*B. H. D.*)

Tuberculous Thrombolymphangitis of Larynx.—In a number of larynxes tubular cavities were found in the submucous tissues. These cavities were rather irregular in shape, their lumina varying considerably in size; sometimes different cavities were communicating. Their walls consisted of a sharply defined layer of connective tissue with smooth-muscle fibers. The inner sur-

face was in most cases covered by an endothelial layer. The cavities were filled with dense fibrinous coagula, numerous mononuclear cells, some of which carried anthracotic pigment, and with a clear solidified fluid. These foci of thrombolymphangitis had sometimes ruptured into the surrounding tissue, which, in these cases, showed an intense inflammatory reaction. Sometimes the thrombotic mass was caseated, and typical tubercles were found in the lymphatics. These observations lead to the conclusion that the propagation of the tuberculous virus occurs through the lymphatics within the larynx. Since anthracotic pigment was found in the cells of the diseased lymph vessels it is possible that the infection of the larynx occurs by lymphogenous spread from the lung.—*Über Thrombolymphangitis tuberculosa im Kehlkopf, P. Manasse, Klin. Wchnschr., September 3, 1927, vi, 1701.—(M. P.)*

Treatment of Painful Dysphagia in Tuberculous Laryngitis.—Of all the methods used in the treatment of this distressing condition, injections of alcohol of the superior laryngeal nerve give the most lasting and most satisfactory results. They should be done as early as possible, rather than to wait until the patient has reached the stage of extreme cachexia. The procedure itself is free from danger and is not followed by serious complications if careful technique is used. In about one-third of the cases the injection provokes a mild excitement or shock, especially in nervous patients. This may sometimes be prevented by a preliminary hypodermic injection of morphine. The duration of the anesthesia depends upon the success of the procedure. The average time is from one to six weeks.—*Sulla cura della disfagia dolorosa nei tuberculotici con le iniezioni paranervose di alcool, G. Autognoli, Tubercolosi, April, 1927, xix, 145.—(U. E. Z.)*

Contamination of Thoracic Wall from Pleural Puncture.—Needle punctures of the pleura, regarded as a useful and painless procedure, are commonly performed with little or no apprehension. The following questions are to be considered: (1) the possibilities and aspects of contamination of the chest-wall in (a) serous or purulent exudates of tuberculous origin, and (b) those of nontuberculous origin, and (2) the consequences of such contamination and possible means of avoiding it. I: *Tuberculous Cases:* Among these are considered: *A: Serous Pleurisies:* In such cases exploratory puncture is almost a classical procedure and is generally performed without moment. Occasionally a small painful nodule has been observed subsequently at the site of puncture. Again, several months later a cold abscess of the chest-wall may appear. If the same physician or surgeon attended the patient throughout, a connection between the two events might be observed oftener. These factors of importance are to be remembered: *1:* The special structure of the thoracic wall, represented by an osteocartilaginous box, which holds the interposed muscles and to which the parietal pleura adheres. Puncture interferes with the parallelism of the tissue planes and favors their penetration by pleural fluid. The internal or pleural orifice of the needle track does not close. *2:* The vulnerability of cellular tissues everywhere to infection. *3:* The multiplicity of punctures: in almost every case of chest-wall contamination there have been repeated punctures. Clinically the *nodule d'ensemencement* appears oftenest the following day, as a slight subcutaneous induration, often slightly painful, but usually of benign evolution and disappearing rapidly. This nodule, however, can often be seen to undergo typically tuberculous changes, such as induration, caseation, softening and suppuration. The patient is by this time cured of his pleurisy and this secondary focus is evolving independently. *B: Purulent Pleurisies:* Here the abscess of the chest-wall evolves more rapidly, and may have disastrous consequences. One may say in such cases that pleurotomy means death within a few months. It frequently happens that in the course of such a pleurisy an abscess appears at the site of puncture on the chest-wall. The surgeon opens and evacuates it superficially, only to find an internal orifice discharging continuously or intermittently, especially after coughing. This fistula is soon converted into the exit of an open tuberculous empyema, with grave prognosis. Indeed, such a cold abscess of the chest wall consecutive to puncture of a suppurative tuberculous pleurisy, does not always mean actual pleural communication. It may be sacculated or loculated. Before opening it, the possibility of communication with the pleura should be investigated by radiographic examination after injection of lipiodol. *C: Pleurisies of artificial pneumothorax:* These exudates should not be evacuated without very clear indications. They occur in 60 per cent or more of all cases. The internal origin of infection may be considered as demonstrated. A purulent tuberculous pleurisy is always serious, but less so when closed than open. Also, superficial incision of a chest-wall abscess, developing after puncture, may lead eventually to death, as previously shown. *II: Nontuberculous*

Cases: While the sequelae of inoculation of the chest-wall are generally less alarming in these, they may nevertheless be grave. "Warm" abscess, phiegmon or gangrene may develop. The reaction of the tissues of the thoracic wall varies with the nature of the infection in the pleura. A pneumococcus infection rarely provokes a serious parietal abscess; whereas a virulent streptococcus infection may be very serious. Massive thoracic suppurations are sometimes seen. *Practical Considerations*: *1:* The number of punctures is an important factor, although even a single one may cause contamination. *2:* Rigorous asepsis to avoid internal contamination must be employed. *3:* As fine needles as possible should be used, especially for serous exudates. Before resorting to many exploratory punctures the aid of fluoroscopy and roentgenography should be invoked. *4:* Puncture anterior to the axillary line has been recommended, subsequently having the patient lie on the sound side. *5:* Dumarest has treated successfully a number of cases by heliotherapy. 6. Courmont injects through the needle, before withdrawing it, a few cubic centimetres of Dakin's or Dubar's solution; this has partly a mechanical action in that it removes from the needle the drop of pleural liquid suspended in the lumen.—*L'ensemencement de la paroi thoracique dans les ponctions de la plèvre, Tixier and Pollosson, Presse Méd., January 30, 1926, no. 9, 129.*—(*A. P.*)

Tuberculosis of Axillary Lymph Nodes.—Tuberculosis of the axillary lymph nodes is found amost constantly, especially associated with anthracosis, in old cases of pulmonary tuberculosis with old pleural adhesions, but not in the presence of exudative processes even when pleural adhesions exist. In children, in over 50 per cent of the cases, axillary lymph-node tuberculosis is found, more usually on the side of the primary complex. The following theoretical lymph paths come into consideration: (1) Through the superior thoracic aperture by way of the tracheobronchial lymph nodes, supraclavicular nodes, and axillary nodes retrogradely; (2) through the intercostal spaces (Most), by indirect communication of the pulmonary lymph channels with the lymph channels of the costal pleura, from the tracheo-bronchial lymph nodes through the posterior mediastinal lymph nodes, along the mesial intercostal nodes to the heads of the ribs and then direct through pleuritic adhesion by way of newly formed lymph channels (Talke).—*Über Tuberkulose der Achsellymph drüsen, W. Jehn, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 38.*—(*H. J. C.*)

Tuberculous Bronchiectasis.—In three cases of typical bronchiectasis the sputum was found to contain tubercle bacilli, and the conclusion was reached that the bronchiectases were caused by a sclerosing tuberculous process. Whenever the history of a patient with bronchiectasis does not reveal an acute or subacute pulmonary disease, a diffuse sclerosing pulmonary affection must be suspected, the most frequent one being tuberculosis. This is particularly the case in multiple, nonvoluminous bronchiectasis.—*Sur trois cas de bronchiectasies liées à des scléroses pulmonaires de nature tuberculeuse, L. Bernard and M. Lamy, Meeting Soc. Méd. d. Hôp., April 29, 1927, reported in Prog. Méd., May 21, 1927, no. 21, 815.*—(*M. P.*)

Laennec's Conception of Pleurisy.—With the discovery of auscultation Laennec was able better to evaluate his earlier studies on pleurisy and to establish definite physical signs as characteristic of the disease. Many of the physicians of his time considered the appearance of an effusion during the course of pleurisy as a terminal event. Laennec stated, however, that serous effusions begin with the onset of inflammation. He recognized the processes of organization in the repair of pleuritic lesions, and his findings have been long since corroborated by modern investigators. Many of the classic physical signs were described by him, and in his treatise on auscultation he emphasized the absolute diagnostic value of egophony in the presence of pleural effusions. Percussion changes, flattening of the shoulder, retraction of the interspaces, and atrophy of the muscles were all noted and described by Laennec in a most masterly, and comprehensive manner. He stressed the value of careful inspection in the examination of patients. He mentioned the possible relationship between pleurisy and pulmonary tuberculosis. He made the further observation that the lung may be compressed by an effusion and that, as a result of this, the development of pulmonary lesions may be checked.—*Quelques réflexions à propos de la pleurèsie dans l'oeuvre de Laennec, A. Courcoux, Progrès Méd., December 11, 1927, no. 51, 1938.*—(*U. E. Z.*)

Recurrent Exudative Pleuritis.—The case of a boy, 14 years of age, is reported, in whom attacks of exudative pleuritis, apparently arising from diseased hilum lymph nodes, were observed. After the second attack fine nodular shadows were seen roentgenologically over the affected side. The differential diagnosis between pleural shadows and disseminated pulmonary foci

remained uncertain in the absence of characteristic physical signs.—*Ein Fall rezidivierender, Exsudativer Pleuritis im Sekundärstadium der Tuberkulose, F. Scheidemandel, Klin. Wchnschr., June 11, 1927, vi, 1145.—(M. P.)*

Pleurisy in Various Stages of Tuberculosis.—Tuberculous pleurisy is not a manifestation of a certain stage of tuberculosis, as suggested by Liebermeister, but it merely is the result of an acute condition which can occur in any stage. The course of moist and dry pleurisy in the individual stages was followed in a large number of cases. The etiological diagnosis in the first and second stages is frequently made only with a certain possibility, while in tertiary phthisis it is easily determined as the result of the coincident pulmonary disease. The course of pleurisy in the secondary stage is manifested mainly through a tendency to leaving residua, although it is in most cases favorable, while pleurisy of the third stage more frequently leads to the formation of associated nodular pulmonary phthisis, as a rule with adhesions and only rarely to exudations or purulent pleurisy. The prognosis is dependent upon the course of the pulmonary disease. It is not sufficient, with our present knowledge, to make a diagnosis of tuberculous pleurisy alone, but it is necessary to determine the stage of the basic disease upon which this acute process originated. The more exact diagnosis makes possible valuable prognostic and therapeutic deductions.—*Die Pleuritis in den verschiedenen Stadien der Tuberkulose, R. Steinert, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 303.—(H. J. C.)*

Pleurisy, Meningitis and Peritonitis in Various Stages of Tuberculosis.—Pleurisy, meningitis and peritonitis, occurring during the course of tuberculosis, are expressions of an acute process. Acute periods can occur in the secondary as well as in the tertiary stage. The periodic steplike course of tuberculosis is characteristic of the secondary and tertiary stages. Haematogenous metastases furnish no criterion for a classification into stages. Every appearance of a gross caseating organic phthisis is an indication of the tertiary stage, even when the caseous foci are found in the kidney, bone and adrenals.—*Pleuritis, Meningitis und Peritonitis in den verschiedenen Stadien der Tuberkulose, G. Liebermeister, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 301.—(H. J. C.)*

Spontaneous Pneumothorax.—In 85 per cent of all cases of spontaneous pneumothorax, pulmonary tuberculosis is the etiological factor, regardless of the stage of the disease. At times spontaneous pneumothorax is caused by bronchiectasis, extensive emphysema, pulmonary abscess, pulmonary echinococcus or empyema. Gastric ulcer, and mediastinal, pleural or oesophageal tumors are exceedingly rare causes. A third group of cases does not reveal any signs or symptoms of disease; trauma plays an important rôle. The case of a man, 19 years of age, is reported, who developed a complete bilateral pneumothorax while playing football. The usual acute symptoms disappeared within twenty-four hours, leaving only slight dyspnoea on exertion, although X-ray showed the left lung completely collapsed. After a five weeks' rest in bed, the lung was expanded and did not show evidence of disease. The therapy consists in narcotics to combat cough, pain and dyspnoea, and cardiac stimulants if indicated. Withdrawal of air is only rarely necessary, since spontaneous resorption usually occurs on bed rest.—*Ueber spontanen Pneumothorax, A. Weisz and E. Koppenstein, Wien. klin. Wchnschr., August 11, 1927, xl, 1023.—(M. P.)*

Spontaneous Pneumothorax.—*Case report:* A man, 21 years of age, noticed suddenly, while taking a shower-bath, great difficulty in breathing and pain in the gastric region. After a short rest the discomfort diminished, but dyspnoea on exertion and epigastric pain continued. Three days after the onset he was admitted to the hospital. The diagnosis of a complete left-sided pneumothorax was established from clinical signs and the X-ray picture. Withdrawal of air from the pneumothorax relieved the patient somewhat, but did not lead to expansion of his lung. A cannula, with a valve which transmitted air only in the direction from thorax to outside, was introduced into the pleural space. One day after the insertion of this cannula, the lung was completely expanded, and, with the exception of a temporary slight exudate, recovery was uneventful. The reëxpanded lung did not show any pathological changes either on physical examination or roentgenologically.—*Ueber einen Fall von linksseitigem Spontanpneumothorax bei vorher gesunder Lunge, O. Hitschmann, Wien. klin. Wchnschr., May 12, 1927, xi, 622.—(M. P.)*

Treatment of Tuberculous Pyopneumothorax.—As the result of an experience in treating 27 cases of empyema it is concluded that only small empyemata permit conservative treatment. In large empyemata rinsing and drainage, with subsequent antiseptic treatment, result in good in the

majority of cases. Only after this form of therapy is without result is radical surgery indicated. Flushing also leads to favorable results in milder cases of mixed infection. Only with spontaneous rupture of an empyema into the lung is there an absolute indication for surgical intervention.—*Zur Frage der Behandlung des tuberkulösen Pyopneumothorax, H. Bramesfeld, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 241.*—(*H. J. C.*)

Prognosis and Treatment of Pyopneumothorax.—The author differentiates the slowly developing pyopneumothoraces from the rapid ones with severe general symptoms. Primary empyemata, with positive bacillary findings, leave an extraordinary hypersensitiveness, which is due to the specific changes in the pleura, and these forms are favorably influenced by conservative treatment. Pleural flushing in noninfected empyemata is of no value. Repeated punctures are advised against in cases of pleural tuberculosis. Thoracoplasty is also conservatively approached. Two cases of thoracic pneumothorax fistulae are reported. Certain fistulae can exist for a long time without the development of mixed infection; they do not, therefore, contraindicate conservative treatment, with the possibility of spontaneous healing. In certain cases, however, thoracoplasty is recommended before mixed infection has set in.—*Beitrag zur prognostischen Beurteilung und zur Therapie des Pneumothoraxempyems mit besonderer Berücksichtigung der Thoraxfistel, E. Fraenkel, Ztschr. f. Tuberk., 1926, xlvi, 300.*—(*H. J. C.*)

Changes of Gastric Mucosa in Pulmonary Tuberculosis.—The author reports 10 unquestionable cases with the picture of a chronic gastritis, in some cases combined with atrophy, resulting in a cystic dilatation of the secretory tubules, with lengthening and other changes. In 3 cases of general amyloidosis the stomach was involved, and in one case there was a tubercle in the deeper layers of the pylorus. Tubercle bacilli were never found in the mucosa, but mostly in the mucus. Pyrexia, and the grade and extent of the underlying pulmonary tuberculous process exerted no influence upon the gastric changes. On the other hand, the intensity of the stasis of blood seems to parallel these changes. The irregular occurrence of the changes might seem to speak for a correlation with swallowed sputum, but individual disposition may play a part. As a vicious circle a constitutional dyspepsia might favor the existence of a gastritis with the outbreak of pulmonary tuberculosis and these dyspeptic complaints may increase in cases of phthisis.—*Über die Veränderung der Magenschleimhaut bei Lungenphthise, T. Schnider, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 734.*—(*H. J. C.*)

Curability of Intestinal Tuberculosis.—That intestinal tuberculosis can be healed has been proved. This may take place in the presence of an advancing and fatal pulmonary tuberculosis. Evidences of healing of intestinal tuberculosis were found in 5 patients dying from pulmonary tuberculosis. Of 360 patients treated with artificial heliotherapy, 119 are dead, 18 per cent were not benefited, 33 per cent were slightly or considerably helped, 25 per cent were markedly improved, and 24 per cent (86 patients) were apparently cured of secondary intestinal tuberculosis. The rarity of ralapse and pathological evidence both testify to the curability of this dreaded complication. Other methods of treatment may be more effective than artificial heliotherapy, but nowhere in medical literature are so many recoveries from secondary intestinal tuberculosis accurately diagnosed, reported.—*The Curability of Intestinal Tuberculosis, L. Brown and H. L. Sampson, J. Am. M. Ass., May 7, 1927, lxxxviii, 1472.*—(*U. E. Z.*)

X-Ray Aspects of Colon in Pulmonary Tuberculosis.—This study was made to secure by roentgenological methods anatomical data on the colon in regard to its shape, position and peritoneal and topographical relationships in patients with pulmonary tuberculosis. Two important questions are whether the colon shows by X-ray methods any characteristics peculiar to tuberculous individuals; and whether certain anatomical features of the colon in those cases in which intestinal tuberculosis has at any time complicated the pulmonary lesion differ from those in the uncomplitated cases. *Method*: Included in this series are only those cases in which 25 hours after the barium meal the colon was sufficiently outlined to determine its shape, position and relation to the stomach, the latter being made visible by a second meal consisting of about 50 cc. of the barium mixture administered during the roentgenoscopic examination. If intestinal tuberculosis complicated the pulmonary lesion at the time of observation the case was at first ruled out because by the 25th hour practically all of the barium had been eliminated. Such cases, however, were included in the series as soon as they retained sufficient barium to outline the colon 25 hours after ingestion. Roentgenoscopic examinations were made in the horizontal position, seven, eight and nine hours after the barium meal, and again in the upright position twenty-five

hours after the meal. An 8-hour film was taken in the prone position and a 25-hour film in the upright position. *Summary:* Roentgen-anatomical studies on the colons of patients with pulmonary tuberculosis are reported. The data given refer especially to the skeletal position of the cecum, length and shape of ascending colon, shape and skeletal position of the hepatic flexure, transverse colon, splenic flexure, descending colon and sigmoid, and also the skeletal position of the greater curvature of the stomach. Findings in 150 cases, 75 males and 75 females, are presented and some of the differences noted in the two sexes are pointed out: for instance, the transverse colon was located above the level of the promontorium in 45 per cent of the males and in only 12 per cent of the females; the greater curvature of the stomach was found, on the average, to reach one vertebra lower in females than in males. Perfect fusion, nonfusion, or imperfect or irregular fusion of the layers of the greater omentum may be judged on the living by the relative position of the transverse colon to the stomach, as seen during roentgenoscopic examination and found by palpation and on roentgenographs: (1) a perfect fusion was inferred in 44 per cent, (2) nonfusion, that is, absence of the so called gastrocolic ligament in about 33 per cent, (3) imperfect fusion in about 15 per cent, and (4) an irregular fusion in 6 per cent. In the remaining 2 per cent of the cases the greater curvature of the stomach was seen below the transverse colon. Adhesions between the ascending and the transverse colon were inferred in 56 per cent, and between the transverse and the descending colon in about 42 per cent of the 132 cases in which the splenic flexure was properly outlined.—*A Roentgen-Anatomical Study of the Colon on One Hundred and Fifty Patients with Pulmonary Tuberculosis, B. Halpert and H. L. Sampson, Am. J. Roentgenol. & Radium Ther., February, 1927, xvii, 253.*—(*W. I. W.*)

Peritonitis in Various Stages of Tuberculosis.—Prior to puberty both sexes are affected with tuberculous peritonitis equally, while after puberty the condition is more frequent in the female. In every stage of tuberculosis a tuberculous peritonitis can develop. While peritonitis occurring in the primary stage indicates a bad prognosis, it becomes more favorable in the secondary stage if it is the only condition clinically discernible during this stage. If it is, however, one of the symptoms of a general dissemination then the prognosis is bad. In the tertiary stage, characterized by caseous phthisis, the prognosis is dependent upon the associated organic phthisis. When the peritonitis accompanies intestinal tuberculosis the prognosis is bad.—*Die Peritonitis in den verschiedenen Stadien der Tuberkulose, H. May, Beitr. z. Klin. d. Tuberk., 1926, lxxiv, 315.*—(*H. J. C.*)

Localized Tuberculosis of Mesenteric Lymph Nodes.—Tuberculosis of the abdominal lymph nodes is characterized by mild and protracted symptoms. It occurred only rarely before the war, but in Poland and Germany it has since become more frequent. There are no circumscribed tuberculous tumors of the mesenteric lymph nodes nor any peritoneal tuberculosis, but there exists a primary tuberculosis of the lymph nodes of the mesentery of both large and small intestine, which takes the form of localized nodues. Since the patient's main complaints are abdominal pain and vomiting, the disease runs an obscure course objectively, being frequently mistaken for appendicitis or helminthiasis (*Ascarides*). The pain that occurs is mild; often it is not present, or it is elicitated by pressure of the clothing and the taking of food. In no case was there fluid in the abdominal cavity or enlarged lymph nodes in other parts of the body. There was fever only in the cases with greatly enlarged lymph nodes; sweats were rare. The condition is differentially diagnosed with difficulty from such other affections as leukaemic lymphadenosis, subleukaemia and aleukaemia, lymphogranulomatosis, lymphosarcomatosis, carcinoma metastases and syphilis. Diagnosis is substantiated by a markedly positive Pirquet test. Inasmuch as the red-cell sedimentation and Matéfy reactions were negative in the majority of cases, the prognosis is considered favorable and the condition tends to spontaneous fibrosis (*periadenitis tuberculosa productiva*). The age incidence varied from 6 to 35 years, females predominating. Occasionally large nodules developed, and caused stenosis of the intestinal lumen. In rare cases the disease can extend to other organs (joint tuberculosis, kidney tuberculosis and tuberculous peritonitis). The source of infection is milk from tuberculous cattle and the route the intestinal tract. The best results in treatment were had from the X-ray, reinforced by the inunction treatment of Kapesser. Surgical interference was indicated only in those cases with pronounced nodular development and tissue destruction. —*Die isolierte Tuberkulose der Mesenterial-lymphdrüsen, S. Klein, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 268.*—(*H. J. C.*)

Tuberculosis of Spleen.—*Case Report:* A man, 50 years of age, developed a tumor of the spleen in the Spring of 1922. The diag-

nosis of aleukaemic leukaemia was made, and the patient was treated with X-ray radiation of the spleen for one-half year. This treatment reduced the tumor very considerably, and the subjective symptoms, such as fullness of the abdomen and general weakness, were much improved. In the Spring of 1926 the patient developed influenza, and his general condition became rapidly worse after the acute illness. He was admitted to the hospital in March, 1926. At this time he was dyspnoeic. Over the left lower lobe the percussion note was dull. There was bronchal breathing with râles over this area. Over the rest of the lung bronchitic râles were heard, and pleuritic friction on the right anteriorly. In the left abdomen there was a hard smooth tumor which occupied the whole left side. The urine contained traces of albumin, but no granulated or hyaline casts, and a few leucocytes and epithelial cells. The blood showed anisocitosis, poikilocitosis, polychromatophilia, 16 per cent polymorphonuclear leucocytes, 47 per cent small and 36 per cent large lymphocytes, and 4 per cent eosinophiles. From the left pleural cavity a moderate amount of serous fluid was withdrawn, which did not contain any microorganisms. The rectal temperature varied between 38.5° and 40.2°C. Ten days after admission the patient died in sudden collapse. At necropsy the spleen was found to weigh 2,850 gm. It was studded with nodules, varying in size from a pinhead to pea; they contained large numbers of tubercle bacilli. The liver was not enlarged but it showed fatty changes. The cut-surface showed innumerable pinhead-sized nodules. The bronchial, paratracheal, retroperitoneal, and portal lymph nodes were enlarged, and contained tubercle bacilli. There was hypostatic pneumonia in the left lower lobe and diffuse bronchitis throughout the lung. The tubercles in the liver seemed to be of rather recent date.—*Über den Verlauf eines Falles von Milztuberkulose und seine Behandlung mit Roentgenstrahlen, A. Hallermann, Klin. Wchnschr., March 12, 1927, vi, 502.*—(*M. P.*)

Histogenesis of Splenic Tubercle.—Certain forms of splenic tubercles previously neglected, show pure and apparently also primary tissue-proliferation, which expresses itself in the formation of dense recticular fibres in certain of the follicle tubercles. Tissue-destruction, described by Weigert-Huebschmann as the morphogenetic basis of the tubercle, was absent. The capillaries of the follicles showed very little change. This form of purely proliferative tubercle with very little tendency to caseation was often associated with pronounced endothelial activation, especially in the liver and spleen, in this respect behaving very much like the guinea-pig spleen.—*Zur Entstehungsgeschichte des Milztuberkels, W. Pagel, Centralbl. f. Allg. Path., 126, xxxviii, 195.*—(*H. J. C.*)

Extrapulmonary Tuberculosis and Reinfection of Lung.—Among 20 cases of extrapulmonary tuberculosis, of which 8 had determinable clinical pulmonary findings, there were 13 with definite roentgenological, even though only latent, pulmonary changes, and 3 were of questionable nature. The pulmonary reinfection occurred, in all probability, coincident with the bone tuberculosis, and originated endogenously from the fresh primary complex. In every extrapulmonary tuberculosis a careful search of the lungs should be made. The study did not reveal why one focus could become progressive and the pulmonary focus, on the other hand, remain latent.—*Extrapulmonäre Tuberkulose und Reinfekt in den Lungen, F. Hesse, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 366.*—(*H. J. C.*)

Pathology and Treatment of Surgical Tuberculosis.—Epithelioid and giant cells are expressions of local tissue destruction by tuberculotoxin. Epithelioid cells originate from connective-tissue cells as a result of swelling of the protoplasm after disintegration of the intercellular substance, while giant cells originate from lymph and blood vessels, in proof of which microscopic splenic tubercles are presented. A rational therapy of bone tuberculosis must aim to reinforce lymphocytic infiltration and render the primary focus harmless by local treatment.—*Richtlinien in der Therapie der Chirurgischen Tuberkulose, mit besonderer Berücksichtigung der Histogenese des Tuberkels und der Pathologie der chirurgischen Tuberkulose, K. Meszaros, Arch. f. klin. Chir., 1926, cxli, 170.*—(*H. J. C.*)

Various Forms of Bone Tuberculosis.—A differentiation of bone tuberculosis into exudative and productive forms is pathologically-anatomically not possible. The divisions into granulating forms, fibroid forms and caseous osteitis should be retained. Roentgen pictures of sections photographed under water show this differentiation into the above forms. It is emphasized that such a differentiation is of practical importance, since the granulation and fibroid forms respond well to irritation therapy, while the caseous osteitis should be treated by absolute rest only—*Die verschiedenen Formen der Knochentuberkulose im Röntgenbild, Kremer, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 250.*—(*H. J. C.*)

Deep X-Ray Treatment of Bone and Joint Tuberculosis.—A series of 50 cases of bone and joint tuberculosis of various ages are reported, which were observed for a period of three years after roentgen therapy. Of 35 joint cases, 21 closed and 14 with fistula, there were 9 healed, 14 improved, 10 uninfluenced and 2 subsequently operated upon; and of 16 cases with bone tuberculosis there were 2 healed, 6 improved, 6 uninfluenced and 2 subsequently operated upon, a total of 31 cases (62 per cent) healed or improved. Under the term *healing* is understood the finding of regeneration changes by X-ray, absence of pain, and improvement of the general condition. Of 10 cases of disease of the knee-joint 2 were healed, 5 improved and 3 unimproved. The favorable cases belong to the younger periods of life. Of 8 cases of the foot 4 were healed, 3 improved and 1 uninfluenced. The closed cases proved more favorable than the ones with fistulae. Of the hip-joint cases 2 were improved and 2 uninfluenced; one case of tuberculosis of the hand was favorably influenced; 2 of the elbow were healed and 1 improved and 1 unimproved; of the shoulder 1 was healed, 2 improved and 2 unimproved. Among the cases of bone tuberculosis those with affections of the smaller bones were more favorable than those of the larger bones. It is admittedly difficult to differentiate between the beneficial effect obtained from the roentgen therapy as compared with general therapy.—*Ein Beitrag zur Frage der Röntgentiefentherapie der Knochen- und Gelenktuberkulose, A. Loewenstamm and L. Stehr, Deutsch. Ztschr. f. Chir., 1926, cxcvi, 340.*—(*H. J. C.*)

Treatment of Sternoclavicular Tuberculosis by Resection.—Dufourmentel has treated 4 such cases by ablation *en bloc*, following Gaujouin's method. He makes an L-shaped incision, or a semilunar one in the case of a double resection, the concavity upward. The tendinous insertions are dissected free, and the costal cartilage is freed by torsion, except where ossified, when a saw is used. The bones are extirpated without disarticulation and the wound sutured without drainage. Trèves approves of complete excision, rather than curettage and exposure which used to be favored. Drainage is unnecessary and infection of other tissues uncommon, as the bacilli appear to be of low virulence for them.—*Observations de tuberculoses sterno-costo-claviculaires traitées par le resection totale de l'articulation, Dufourmentel, Meeting, Societe des Chirurgiens de Paris, December 26, 1925, reported in Presse Méd., January 30, 1926, no. 9, 136.*—(*A. P.*)

Tuberculosis of Pubic Bone.—The author reports on the symptoms, differential diagnosis, and therapy of tuberculosis of the os pubis, as based on a study of 5 cases. The subjective symptoms are mostly only slight, either swelling or abscess-formation calling attention to the condition. The abscesses can occur in many locations, above or below Poupart's ligament, in the thigh and in the labium majoris, thus leading to errors in diagnosis. Operative treatment combined with general treatment was recommended as therapy and proves beneficial in so far as the local condition is concerned.—*Die Tuberkulose des Schambeins, M. Madlener, Deutsch. Ztschr. f. Chir., 1926, cxcvi, 329.*—(*H. J. C.*)

Tuberculosis of Pubic Bone in Child.—This is a case report of tuberculosis of the pubic bone occurring in a child aged seven. The condition was first diagnosed as osteomyelitis, but histological examination of the bone curettings established the tuberculous etiology. A rather extensive curettage brought about a complete cure.—*Tuberculose du pubis, Mouchet, Meeting, Soc. d. Chirurgie, May 12, 1926, reported in Prog. Méd., June 12, 1926, no. 24, 929.*—(*B. T. McM.*)

Treatment of Tuberculosis of Hip Joint.—In sanatoria in which patients may be treated for a long time, it is advisable to hold the hip joint in an intermediary position by posture, plaster splints, cushions, and extension, and not to attempt a rigid fixation. After improvement has resulted an attempt should be made to change this position into complete extension which is functionally more efficient. This change must be brought about without violent force, and exacerbations call for relaxation. In the meantime graded heliotherapy, in some cases passive hyperaemia, and iodine were administered. Under such management the motility of the joint may be preserved. Contracted joints may become looser. An enforced extension during the active stage of the disease leads to subluxation or even to dislocation. Technique and results of this management are exemplified by two cases. It is emphasized that deformities are avoided by keeping the cartilagenous ends of the joint in contact. The primary posture of half-flexion is slowly and gradually changed into extension; the steps taken are flexion abduction, external rotation, and finally extension.—*Ueber die Behandlung der Tuberkulose des Hüftgelenkes, K. Durban, Wien. klin. Wchnschr., August 18, 1927, xl, 1051.* (*M. P.*)

Tuberculosis of Diaphysis.—An instance of isolated tuberculosis of a diaphysis is sufficiently rare to constitute a surgical curiosity. The case reported appears to be the only one in the literature in an adult from whom a culture of bovine tubercle bacillus was isolated. The patient was a man of forty-five, previously quite well, but whose mother, sister and child had all died of pulmonary tuberculosis. Two years previous to admission there had been a period of about three months during which there was pain in the right thigh that simulated and was diagnosed sciatica, and was without constitutional symptoms. Twenty months later similar but more severe pain, anorexia, loss of weight, and fatigue developed. During the remission there had been slight tenderness on pressure over the mesial aspect of the proximal half of the right thigh. On admission a roentgenological diagnosis of osteomyelitis was made and at operation a drop of pus exuded from beneath the periosteum and later a great deal of thin pus drained. For two weeks, beginning six days after operation, there was high fever up to 104° in the evening. At the end of this time an abscess ruptured spontaneously in the dependent portion of the affected leg, since which time the temperature has been normal. Inoculation of the pus into a guinea pig produced generalized tuberculosis and death in four weeks. "Bacteriological" evidence proved the germ to be of the bovine type. The patient now appears to be perfectly well, locally and generally.—*Tuberculous diaphysis, H. Ragolsky, J. Bone & Joint Surg., April, 1927, ix (old series, xxv), 288.—(H. S. W.)*

Operative and Nonoperative Treatment of Pott's Disease.—The notoriously large number of failures from operations upon Pott's disease justifies a modified procedure in the treatment of such cases in children. It is therefore recommended that the child (under ten years of age) with Pott's disease must be placed on a Bradford frame under favorable conditions, and kept there "in absolute recumbency until bony union of the diseased vertebrae is clearly demonstrated by the X-ray." Fourteen children under the age of ten years were selected as nearly as possible in pairs as regarded amount of disease, size and general condition, and all put on Bradford frames. From each pair one was operated upon (Hibbs type of fusion) and returned to the frame, and one was kept in prolonged recumbency on the frame. From time to time children in both groups who were clinically free from symptoms were allowed to get up and wear braces, but such experiences always led to a recurrence of symptoms unless there was in the X-ray "a continuous firm bony bridge uniting the diseased vertebrae, and the disappearance of all signs of rarefaction between them." This means permanent cure. Of the 14 children 13 are well and active; the kyphos in 11 is so small as to be of no importance. It appears that the cure of this disease in children depends principally upon long-continued rest without weight-bearing; that cases in which fusion (by operation) has been done require the same careful treatment as do those without operation; that unoperated ones have more flexible spines than operated ones.—*Comparative Results of Operative and Non-Operative Methods of Treatment of Tuberculosis of the Spine in Children, F. C. Kidner and F. Muro, J. Bone & Joint Surg., October, 1927, ix (o.s., xxv), 649.—(H. S. W.)*

Astragalectomy in Tibio-Tarsal Tuberculosis.—This operation was performed in 3 cases with fistulous tracts. The patients were 7 years, 8 years, and 26 months of age. Cure resulted in all cases in a period from eighteen months to two years, and there has been no recurrence after four or five years. Satisfactory anatomical and functional results were obtained. Early treatment in children with tuberculous tibio-tarsal arthritis should be conservative (immobilization and heliotherapy). Astragalectomy should be resorted to when fistulae develop, or if the X-ray shows the presence of a sequestrum.—*Astragalectomie pour tuberculose tibiotarsienne, Judet, Meeting, Soc. d. Chirurgiens de Paris, June 17, 1927, reported in Prog. Méd., July 2, 1927, no. 27, 1051.—(U. E. Z.)*

Tuberculous Rheumatism.—Following an attack of acute polyarticular rheumatism, a young female was seized with pain in the rght wrist. Because of the atypical character of the arthritis, a gonococcal infection was suspected. Radiographic studies, however, revealed tuberculosis of the carpal joints. Moreover, a short time previous to this illness, she had received artificial pneumothorax treatment for a pulmonary lesion. During the course of pleurisy it is possible for articular localization of protein origin (analogous to serum sickness), to occur. A joint previously involved by rheumatism, may become the seat of a tuberculous process.—*Rhumatisme tuberculeux, Babonneix and Momet, Meeting, Soc. Méd. d. Hôp., July 23, 1926, reported in Prog. Méd., July 31, 1926, no. 31, 1191.—(U. E. Z.)*

Chlorides in Spinal Fluid in Tuberculoma of Brain.—The work of Collier is

cited, indicating the rarity of association of normal total chlorides of the spinal fluid (720–750 mgm. per 100 cc.) with tuberculous meningitis. Also, Fremont-Smith is quoted as saying that chloride values below 600 mgm. are infrequent in conditions other than tuberculous meningitis. McLean and MacIntosh, however, could place but little reliability on chloride determination because of the wide variability of the figures obtained by them. The writer recommends diluting the fluid with equal parts of alcohol in order to enmesh tubercle bacilli in the flocculent precipitate, thus facilitating their discovery by microscopic examination. A case of tuberculous meningitis in a girl of 22 months is presented. The total chlorides in the spinal fluid were 581 mgm. per 100 cc. late in the disease, but tubercle bacilli could not be demonstrated. In a boy of 19 months, the total chlorides were 707 mgm. per 100 cc. in the first specimen of spinal fluid, and 650 mgm. per 100 cc. in the fourth specimen, which was considered typical of tuberculous meningitis. Autopsy of this case revealed a large tuberculoma encircling the medulla. There was tuberculosis elsewhere in the body, but no diffuse meningitis.—*Tuberculous Meningitis, Tuberculoma, and the Total Chlorides in the Spinal Fluid, R. L. Pitfield, Arch. Pediat., August, 1927, xliv, 502.*—(*P. J. W.*)

Meningitis in Various Stages of Tuberculosis.—Tuberculous meningitis does not indicate a definite stage, as maintained in Liebermeister's classification, but it is an acute condition which can be associated with every stage. Since at autopsy cases of tuberculous meningitis almost regularly reveal a rupture of bacilli into the pulmonary vein, it is recommended that in every tuberculous meningitis an exact pulmonary diagnosis be made in order to institute pneumothorax to prevent a further spread of the tubercle bacilli.—*Die Meningitis in den verschiedenen Stadien der Tuberkulose, H. Sieper, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 311.*—(*H. J. C.*)

Tuberculous Meningitis of Long Duration.—At the onset of her disease, a patient, aged 19 years, presented a clinical picture resembling epidemic encephalitis with hysteria. The illness lasted about five months. She was treated with intravenous injections of sodium salicylate. The diagnosis of tuberculosis was made postmortem. The question arises as to whether the duration of the disease was due to the encephalitic form of the disease or to the treatment with salicylate.—*Méningile tuberculeuse de longue durée (150 jours), Laignel-Lavastine, Valance and Poleco, meeting, Soc. Méd. d. Hôp., June 24, 1927, reported in Prog. Méd., July 16, 1927, no. 29, 1115.*—(*U. E. Z.*)

Cure of Tuberculous Meningitis by Friedmann Vaccine.—A case of tuberculous meningitis, in which the diagnosis was made clinically alone and without laboratory examinations, was beneficially influenced and healed by means of the Friedmann vaccine.—*Friedmannsche Heilimpfung einer Meningitis tuberculosa, E. A. Oppenheim, Ztschr. f. Tuberk., 1926, xlv, 316.*—(*H. J. C.*)

Tuberculosis of Urinary Tract.—This is a description of the methods of treatment of inoperable and postoperative urological tuberculosis as it is administered at the Urological Department of the New York Hospital. The special urological treatment varies according to the indications in each case, but it may be described as including bladder irrigations, fulguration of vesical ulcers, cystoscopic observations and ureteral catheterizations. A number of patients suffer considerably from tuberculous cystitis. Methylene blue is administered internally, and applied locally in the form of an alkaline instillation with fairly good results. As a general treatment of tuberculosis, fresh air, rest and good food are prescribed for all patients. The dietary problem is increased by the necessity at times of selecting foods that will not irritate the diseased genitourinary tract. Old tuberculin is administered subcutaneously in suitable cases. Avoidance of reactions gives the best results. The mercury-vapor quartz lamp is very useful, being almost specific in the treatment of postoperative tuberculous sinuses. The sinuses, following nephrectomy, epididymectomy, and orchidectomy for tuberculous lesions, yield readily to the lamp treatment. Several representative cases are reported.—*The Treatment of Inoperable and Postoperative Tuberculosis of Urinary Tract, S. L. Wang, J. Am. M. Ass., June 11, 1927, lxxxviii, 1872.*—(*W. I. W.*)

Treatment of Renal Tuberculosis.—The symptoms of renal tuberculosis are not sufficiently appreciated by the profession. The presence of pus in urine never warrants a diagnosis of cystitis or pyelitis until careful cystoscopic, roentgenographic and bacteriological search for the cause of the disorder has been made. So also with haematuria. The periods of relative inactivity and quiescence of symptoms in renal tuberculosis are particularly likely to throw one off the diagnosis, at least for a time. The first symptoms are vesicular, and are associated with slight changes in the urine that do not sufficiently impress the patient to send him to the physician. Such symptoms are secondary to renal disease, for primary tuberculosis of the bladder is extraordinarily rare. Renal tuberculosis is a haematogenous infection. Whether bacilli may be shed off

from the body through normal kidneys is a theoretical question of some interest, but tubercle bacilli in the urine almost certainly indicate disease of that organ. The urine may remain free from inflammatory products even with extensive peripheral (cortical) disease until the latter breaks through into more central regions. Tubercle at the apex of the pyramid most frequently causes haematuria (early), pyuria and bacilluria. Decending tuberculosis and fibrosis of the ureter gradually follows. Secondary infection of the other kidney from an ascending process arising from the bladder is of considerable importance. There are sometimes only slight differences in the symptoms in tuberculosis of the kidney and several other renal infections. Pain is uncommon; frequency of urination is in proportion to the severity of the disease; haematuria may be the initial symptom. From intelligent patients one may, through the history, get a great deal of light on the nature of the haematuria that is helpful in distinguishing the bleeding from that in renal calculus (with pain on movement of the body, etc.), tumor (with loss of abundant amounts of blood, uninfluenced by movements or quiet), and nephritis (with other signs of the disease present). Bleeding from tuberculosis of the kidney is variable. A haemorrhage may occur suddenly and cease just as suddenly, and the patient be free from gross bleeding for a considerable time. But renal tuberculosis produces other urinary changes that may lead to the diagnosis. Polyuria, pyuria with a grayish-yellow color to the urine, leucocytes, casts, an acid reaction even when left in the open air for ten days, are all of great importance in determining the diagnosis, for they nearly always occur. The X-ray is helpful in diagnosis since it reveals gross changes, such as cavitation, anatomical distortion, or deposition of calcium, and is especially helpful when used for pyelographs. Cystoscopy is also of the greatest aid. When the process has metastasized to the bladder, numerous superficial ulcerations appear in the mucosa near the opening of the urethra of the affected side; later these become widespread. Obviously the detection of the tubercle bacillus is the most helpful of all manoeuvres in the diagnosis. Urine containing pus that is sterile for ordinary bacteria is tuberculous in most instances because, if examined microscopically with care, 80 per cent of such specimens will reveal tubercle bacilli when the specimen has been obtained by catheterization in order to eliminate smegma bacilli. Antiformin and animal inoculation should be resorted to when necessary. Tubercle bacilli in the urine indicate the necessity of urethral catheterization for both the recovery of bacilli and functional tests of the two organs. Nephrectomy with removal of the ureter is indicated whenever unilateral renal tuberculosis is diagnosed. Removal of a part of the organ is not to be advised. One cannot be satisfied with merely the general methods of therapy that produce favorable results in tuberculosis of the skin, bones, joints, etc., or with treatment with light, deep X-ray, tuberculin or change of climate. If the disease is bilateral the prognosis is hopeless. The only operation that is permissible in such circumstances is the removal of the worst kidney when it no longer possesses function and is obviously contributing to the vesicular involvement, and this is only palliative. After removal of the diseased organ in unilateral renal tuberculosis, particular attention must be given to the bladder, and the patient must have good general treatment for a long time. The tuberculosis of the bladder often becomes a new source of infection, and local measures are indicated, such as the application two or three times a week of a solution of hydrarg. oxycyanati, 1:6000, or guyon, 1:15,000 to 1:6000, followed later by guaiacol, 1:20, or iodoformol, 1:10. The patient should meanwhile be under a good hygienic regimen.—*Pracktische Therapie der Nierentuberkulose, P. Janssen, Deutsche med. Wchnschr., October 14, 1927, liii, 1768.—(H. S. W.)*

Kidney Stone and Renal Tuberculosis.—A case is reported in which a kidney stone eroded the artery of one of the papillae, causing severe haemorrhage and necessitating extirpation of the kidney, which contained a number of small tuberculous foci. Microscopically, a severe injury of the renal parenchyma was found which was attributed to injury from the diseased foci as well as to the excretion of toxins.—*Nierenstein und Nierentuberkulose. Beiträge zur Pathologie der Nierentuberkulose, K. Meszaros, Arch. f. klin. Chir., 1926, cxliii, 415.—(H. J. C.)*

Urogenital Tuberculosis.—Tuberculosis of the kidney forms a large portion of the cases of urinary tuberculosis; also, a renal lesion is very commonly the primary focus from which the lower urinary and the genital tracts are directly infected. There are two distinct clinical and pathological types of renal tuberculosis, called surgical and medical, respectively. Statistics show that in about 25 per cent of cases the surgical form is secondary to active pulmonary and pleural tuberculosis. Surgical renal tuberculosis is primarily unilateral. The medical form is bilateral. Tubercle bacilli reach the kidney either by the blood-stream, or by the lym-

phatics, and of these two routes the haematogeneous is undoubtedly the commoner. Ascending infection along the ureter does not occur. Animal experiments have proved (1) that pyogenic and other microörganisms placed in the bladder cannot pass the normal ureterovesical valve, and (2) that when pyogenic microörganisms are injected into the ureter and pelvis the renal papillae prevent their early entrance into the kidney. Three types of pathological anatomy are recognized: (1) primary closed parenchymatous tuberculous nephritis, consisting of one or more encapsulated foci in the parenchyma which progress to caseation and abscess-formation and ultimately destroy the whole kidney, (2) primary open tuberculous pyelonephritis, characterized by ulceration of the pelvis combined with progressive destruction and ulceration of the papillae and parenchyma, and (3) a third type, consisting of a combination of the open and closed varieties. The clinical signs seldom indicate the extent of the lesion. The symptoms are essentially those of cystitis, pain, frequency, pyuria and occasionally hematuria. Vesical irritation, nocturnal frequency, and the passage of hazy or purulent acid urine in a subject between the ages of 20 and 40 are strongly suggestive of tuberculosis. The surgical treatment of unilateral renal tuberculosis is early nephrectomy. Before an operation is performed the function and condition of the opposite kidney must be carefully investigated. Nephrectomy is contraindicated (1) when the function of the opposite kidney is defective; (2) in advanced bilateral tuberculosis; (3) in slight bilateral tuberculosis; and (4) when the disease is secondary to pulmonary or other gross tuberculous lesions. *Results:* The operative mortality is about 2 per cent. Out of 100 cases that survive the operation 60 will be cured and 40 will have persistent urinary trouble. Of the latter 30 will die in from three to five years of tubercle of the opposite kidney or elsewhere in the body, and 10 will be left with either frequency alone, or frequency and pyuria. Vesical tuberculosis probably never occurs as a primary lesion, but is always secondary either to renal or genital tuberculosis, or, in rare instances, to tuberculous salpingitis by direct extension from an adherent fallopian tube. The immediate treatment is removal of the primary focus. General treatment consists of rest in bed, bladder sedatives, tuberculin and local treatment. Relief can often be obtained by instillations of either *Gomenol* oil 20 per cent; or of iodoform (1 part), guaiacol (5 parts) in sterile olive oil (100 parts). Diathermy treatment, given at intervals of three weeks with a catheterizing cystoscope, is the best form of local treatment. Genital tuberculosis usually occurs between the ages of 20 and 45. Clinical and experimental evidence shows that the primary focus is generally in the prostate or seminal vesicle, and statistics favor the seminal vesicle. In advanced cases medical and general treatment must be resorted to because surgery offers little prospect of cure; but when the disease is limited to the epididymis and seminal vesicle radical operation is indicated. In all cases tuberculin is of great value, but only after operation.—*Urogenital Tuberculosis, C. A. R. Nitch, Brit. Med. J., May 14, 1927, no. 3462, 863.*—(*W. I. W.*)

Tuberculosis of Epididymis and Testis.—Massive tuberculosis of the testicle and epididymis developed in a patient within a few weeks. Castration was performed and an enlarged testicle and epididymis were found firmly bound to each other. The testicle presented a raw chestnut-colored appearance and contained multiple areas of newly formed granulation tissue. Another case of rapidly spreading tuberculosis of the testicle is reported, in which part of the testicle was gangrenous and fungating. Massive tuberculosis of the testis and epididymis is due to the massive liberation of bacilli or toxins at the site of involvement. The fungating forms are due to secondary microbic invasion.—*De la tuberculose massive du testicule et de l'épididyme et de sa pathogénie, LeFur, Meeting, Soc. d. Chirurgiens de Paris, June 3, 1927, reported in Prog. Méd., June 18, 1927, no. 25, 969.*—(*U. E. Z.*)

Treatment of Contracted Tuberculous Bladder.—A case is reported in which the bladder barely had a capacity of 100 cc., and was treated by X-ray after filling with collargol, with coincident *Caseosan* treatment, followed by improvement. Carbolic acid-water rinsings were then used. A later recurrence ensued, with a contraction of the bladder to only 10 or 15-cc. capacity. Conservative treatment was of no avail, and operation indicated that any enlargement of the bladder was out of the question, since an inclusion of the intestine into the bladder wall was impossible. Therefore the ureter of the remaining kidney was implanted in the sigmoid flexure with favorable results. *Zur Therapie der tuberkulösen Schrumpfblase, R. T. v. Jaschke, Centralbl. f. Gynaek., 1926, l, 901.*—(*H. J. C.*)

Genital and Peritoneal Tuberculosis in Female.—Among 44 cases of genital tuberculosis observed in the Greifswald clinic the process was limited to the genital tract in 8, and in the remaining cases there was coincident peritoneal tuberculosis. The

frequent combination of tuberculosis and carcinoma was verified, and a case of this type is reported. Menstrual anomalies need not always be present; of the 44 cases 28 menstruated normally, in 5 there was amenorrhoea, and in 4 diminished and in 7 increased menstruation. Therapeutically, the roentgen ray plays an important rôle. In the dry forms of peritonitis roentgen-ray treatment is immediately instituted. In the wet form the cases are laparotomied, the exudate removed, and X-ray then used. In uncomplicated adnexa tuberculosis the severely diseased side is extirpated, and on the other side a functioning piece of ovary is allowed to remain *in situ*. The remaining ovary is then cautiously rayed. Of the 44 cases 36 could be controlled subsequently, and in 21 healing occurred and in 9 decided improvement.—*Über Genital- und Bauchfell-Tuberkulose beim Weibe, O. Gragert, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 768.—(H. J. C.)*

Genital Tuberculosis of Female.—Genital tuberculosis is only slightly less frequent in the female than in the male. On the other hand, peritoneal tuberculosis is 4½ times more frequent than in the male. In genital tuberculosis there are frequently signs of infantilism and hyperplasia, with signs of diminished sexual differentiation; lack of the characteristic female bodily proportions, lack or diminished development of the hair, etc. In about one-third of the cases the menstrual period occurred late, although in the pure adnexal tuberculosis cases it occurred more frequently regularly than in peritoneal-genital tuberculosis. Amenorrhoea, oligomenorrhoea, hypermenorrhoea and dysmenorrhoea were found not infrequently during the years of puberty in women later afflicted with genital tuberculosis. The great frequency of sterility in genital tuberculosis is well known. In the cases of pure adnexal tuberculosis 92.3 per cent were sterile, while in peritoneal-genital tuberculosis 11.1 per cent, which was about the average of the sterility frequency. Youthful individuals appeared to tolerate operative castration fairly well when tuberculosis existed. Gonorrhoea does not appear to predispose to genital tuberculosis, and the combination of tuberculosis and carcinoma of the tube is exceedingly rare, although the views on the increased susceptibility occasioned by tuberculosis for carcinoma, or *vice versa*, are still divided, and it is believed that a safe view would be to consider the existence of a certain constitutionally diminished organic resistance, which may lead once to the appearance of tuberculosis and again to the development of carcinoma.—*Genitaltuberkulose des Weibes und Konstitution, A. Mayer, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 874.—(H. J. C.)*

Adenomatous Growths in Tuberculosis of Fallopian Tubes.—In a case of tuberculosis of the fallopian tubes, examined histologically, there were found adenoma-like growths of the mucous membrane, which were attributed to the chronic inflammatory irritation of the coincident tuberculosis, occasioning a hypertrophy of the tubal mucous membrane. The recognition of these rare cases is important because they may lead to a false diagnosis of a beginning malignant condition of the tubal mucous membrane. However, it has been observed, that these hypertrophic conditions in tuberculosis can secondarily lead to the development of carcinoma.—*Über adenomähnliche Wucherung der Tubenschleimhaut bei Tuberkulose, H. Zacherl, Arch. f. klin. Chir., 1926, cxl, 642—(H. J. C.)*

Treatment of Skin Tuberculosis.—The technique used in the Marburg Skin Clinic is outlined. Actinotherapy is given preference over all other methods since the results with it are better, especially from a cosmetic standpoint.—*Die Behandlung der Hauttuberkulose, M. Schubert, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 939.—(H. J. C.)*

Lupus Vulgaris in Pomerania.—The development of lupus vulgaris is possible during any period of life, but the disease is most frequent in youth. During the first decade more males are afflicted than females. In more than 50 per cent the mucous membranes were involved, and in 24.7 per cent there was a coincident pulmonary tuberculosis. There seemed to be no preference for the extremities in men, nor was there a preference for the right arm. No conclusions could be drawn from the outcome of the tuberculin reaction as to the type of microörganism, whether human or bovine.—*Über Hauttuberkulose in Pommern, W. Leipold, Beitr. z. klin. d. Tuberk., 1926, lxiii, 857.—(H. J. C.)*

Treatment of Lupus Erythematodes with Gold.—*Aurocantan* and *Krysolgan* were used in 29 cases of lupus erythematodes. No difference in the therapeutic action of these two gold preparations was noted. Large doses were given with short intervals of rest. The injurious effects of the gold preparation were of four types: gold intoxication, tuberculous focal and general reactions, mobilization of lupus erythematodes, and anaphylactic symptoms. Permanent injury of serious nature was not seen. The thera-

peutic effect exceeded that of other methods of treatment and in most cases a good cosmetic result was attained.—*Über die Goldbehandlung des Lupus erythematodes und über Goldschädigungen, S. Rothman, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 906.—(H. J. C.)*

Treatment of Lupus Erythematosus with "Triphal."—Favorable reports of the use of gold in the treatment of tuberculosis has led to the administration of *Triphal* in 2 cases of lupus erythematosus. It is a clear yellow powder, weakly alkaline when dissolved in water, and the active principle in it is the sodium salt of aurothiobenzimidcarbonic acid. The initial dose was 0.0025 gm., and was increased to 0.1 gm. gradually, so that it did not produce symptoms. It was given intravenously. In one case of six years' duration, five doses brought about a cure; at least, six months later the patient was free from signs of the disease. The other case, an intractable one of four years' duration, with a comparable series of injections improved a great deal, and the areas of disease which did not entirely heal became stationary four months after the first injection. Improvement was easily demonstrable a few days after the first doses, all of which in both cases were spaced at one to two weeks' intervals.—*Ueber Triphalbehandlung bei Lupus erythematodes, E. Wagner-Katz, Deutsche med. Wchnschr., June 10, 1927, liii, 1000.—(H. S. W.)*

Treatment of Skin Tuberculosis with "Aurophos."—Thirty-two patients were treated with *Aurophos*, including 4 with lupus vulgaris, 19 with lupus erythematodes, 8 with erythema induratum Bazin and one with papulonecrotic tuberculides. The 4 cases of lupus vuglaris remained uncured, although some improvement occurred. Fourteen of the patients with lupus erythematodes and all those with erythema induratum were cured. In the latter disease *Aurophos* appeared superior to all previously tried remedies. Improvement occurred in the case with tuberculides. A routine method of treatment was adopted in which in the course of 15 days the dose injected was increased from 0.001 to 0.1 gm. The smallest amount bringing about healing was 0.0155 gm. *Aurophos* exerts a favorable action, not through its germicidal effect, but in promoting the absorption of pathological tissue.—*Aurophosbehandlung bei Lupus vulgaris, Lupus erythematodes und Tuberkuliden, F. Wirz, München. med. Wchnschr. July 1, 1927, lxxiv, 1090.—(E. R. L.)*

Treatment of Lupus with "Alypin."—The intensive treatment of lupus can be hastened so that a smaller number of hospital beds for the care of this disease are required. Axmann applies a 10 per cent solution of *Alypin*, containing in 10 cc. 2 drops of the usual adrenalin solution and a small amount of carbolic acid. This mixture retains its activity for one or two weeks. In softening the scars *Ectebin*, and a mixture of hydrochloric acid and pepsin, as advocated by Unna, are useful. Pancreatin is useful in the removal of keloids, and a salve containing chaulmoogra esters valuable in scaling of the skin.—*Ambulatorische Lupusbehandlung, Axmann, München. med. Wchnschr., March 4, 1927, lxxiv, 366.—(E. R. L.)*

Chronic Miliary Tuberculosis.—Three cases of chronic military tuberculosis are reported in this communication. In the first case the onset was five months previously, without fever. The disease was rapidly terminated by tuberculous meningitis. The diagnosis was made by X-ray examination. At autopsy the lesions found were miliary tubercles and bronchopneumonic areas. The other two cases with identical X-ray appearances terminated as healed lesions proved by X-ray pictures taken one and two years later respectively.—*Granulie froide, Rist, Rolland, Jacob and Hautefeuille, Meeting, Soc. Méd. d. Hôp., June 4, 1926, reported in Prog. Méd., June 12, 1926, no. 24, 929.—(B. T. McM.)*

Basis of Treatment of Tuberculosis.—In considering the treatment of tuberculosis one may think of general treatment (climate, rest, diet, etc.) as the essential factor in the cure of the disease, and of local treatment (engorgement, local rest, exposure to X-ray, production of focal reaction by specific means) as subsidiary, the employment of the latter being contingent upon individual indications. Or one may place local treatment in the foreground. In the latter case, collapse-treatment (pneumothorax, phrenicotomy or thoracoplasty) is the most important. The favorable results, when such measures are resorted to, are those that come from the engorgement of blood-vessels and hyperaemia of the affected part. One cannot think of specific treatment except in these same terms, namely, that it produces irritation of the diseased part. No one can doubt that the specific tuberculin effects are essentially effects of irritation-therapy which evokes a new production of natural antibodies. The general effect of tuberculin, however, is to be borne in mind, for this is so conspicuous as to render the idea of solely specific local effects untenable. So one has the local irritative and the general effects to bear in mind in any form of treatment (tuberculin, protein or lipoid injections,

etc.). The general effects of X-ray, etc., involve stimulation of the reticulo-endothelial system, or at least concern this system as an intermediary between cause and effect. Other systems involved in producing therapeutic effects are the vegetative nervous and lymphatic. Laparotomy, with its influence upon abdominal tuberculosis, just as renal decapsulation in anuria or deep X-ray therapy or the other so called local measures mentioned, may exert a general influence upon the body. When an organ, such as the lung, is diseased, the disease should not be thought of as merely local, but must be considered as a general disease, as is tuberculosis with manifestations in the lungs. The problem of the treatment of tuberculosis should prompt the study of such questions as (1) What are the climatic and other curative factors that exert favorable influences upon the different types of tuberculosis? (2) Is it possible to depend upon the cutaneous reaction for indications (as to therapy)? (3) What are the contraindications to treatment by high climate, gold-preparations or tuberculin? (4) How can one best spare the body from intoxication in the disease and how can one increase the appetite? (5) What dietary regimen should be employed?—*Grundsätzliches zur Tuberkulosebehandlung, E. Hoffstaedt, Deutsche med. Wchnschr., June 10, 1927, liii, 995.—(H. S. W.)*

Treatment of Pulmonary Haemorrhage.—This report summarizes the observations on 58 cases of pulmonary haemorrhage with particular reference to therapeutic trials. In cases in which small amounts of blood are expectorated over a long time, the cause of the disturbance is most likely an insufficiency in the circulatory system. Very satisfactory results are obtained in such patients by the use of cardiotonic drugs. In more acute forms 10 cc. of calcium chloride in 10 per cent solution was injected at intervals of eight hours. The impression was gained that this therapy has a definitely favorable influence. Narcotics were not given in any case. Encouraged by recent reports on the action of *Stryphnon* in acute haemorrhages, this drug was tried in 10 cases. No beneficial effect was observed. The parenteral administration of 10 cc. of boiled milk was found to be effective. Although most patients react with a marked rise in temperature no untoward effects were observed.—*Zur Therapie der Lungenblutungen. O. Lichtwitz, Wien. klin. Wchnschr., April 28, 1927, xl, 555.—(M. P.)*

Dietetic Treatment of Pulmonary Tuberculosis.—In opposition to Hermannsdorfer's theory it is believed that an attempt should be made to produce a mild alkalosis of the blood and tissues instead of an acidosis in the treatment of tuberculosis. The lack of resistance of the diabetic to pulmonary tuberculosis points to the harmfulness of acidosis. Bodily fatigue is harmful to the tuberculous as a result of lactic-acid formation following muscular exercise. Psychical moments, such as worry, can exert an influence upon the mineral metabolism by way of endocrine glands, and thus unfavorably influence the course of pulmonary tuberculosis. The acid-base balance of the blood is remarkably constant. If there occurs a lack of mineral substances the blood immediately withdraws these from the food and body tissue, so that the blood alkalescence remains while an acidosis of the tissues occurs. In order to avoid the development of circumstances favoring tuberculosis, a definite diet is essential in which vegetables, salads, fruit and bran-soup predominate, while meat and sugar to a certain extent are restricted. To reinforce this diet *Sanatogen, Promonta,* mineral-salt pastelles and other light dietary substances are added.—*Zur Frage der diätetischen Behandlung der Lungentuberkulose, M. Conrad, Ztschr. f. Tuberk., 1926, xlvi, 132.—(H. J. C.)*

Dietetic Treatment in Surgical Tuberculosis.—The apparent antagonism between the group of diseases comprised under the term arthritism, and tuberculosis, their mutual exclusiveness, hypermineralization in one, demineralization in the other, led to the assumption that the excretion of mineral salts should be minimized in tuberculosis. For this purpose a diet was developed which contained a minimum of fluid, not more than half a litre a day, and in order to depress the feeling of thirst, the intake of sodium chloride was reduced to a minimum, while other salts were not reduced in quantity. Under this treatment, secretions from fistulous tracts dried up readily, abscesses were resorbed, the general condition improved, and the weight increased. Twenty-six brief histories are presented to illustrate the results.—*Zur Frage der diatetischen Behandlung der chirurgischen Tuberkulose, P. Lačný, Wien. klin. Wchnschr., August 11, 1927, xl, 1025.—(M. P.)*

Treatment of Tuberculosis with Salt-Free Diet.—Patients were subjected to the salt-free diet advocated by Sauerbruch and Gason. At the same time swine were infected with human tubercle bacilli and then deprived of sodium chloride. The number of experiments was small, but no advantage

appeared to accrue as a result of the treatment.—*Erfahrungen mit der NaCl-freien Diät in der Behandlung der Lungentuberkulose, G. Apitz, Deutsche med. Wchnschr., June 10, 1927, liii, 1003.*—(*H. J. C.*)

Alimentation in Tuberculosis.—As long as a specific agent against the tubercle bacillus remains undiscovered, tuberculosis remains a disorder of nutrition and should be treated accordingly. A proper alimentory regimen is of prime importance. Tuberculosis patients are unable to utilize their digestive products properly. The amino and fatty acids remain as such and are either eliminated, or they accumulate in the organs giving rise to deranged function. The cause of these metabolic disorders lies in an incapacity to oxidize and transform the products of digestion. The condition is an acid intoxication. Delore has shown that an organic acidity is most favorable for the development of tuberculosis. Alkali medication as a therapeutic measure is illusory. All efforts must be directed to the source of the trouble, the diet. It is necessary to aid the body to burn, use and eliminate such organic acids, and this can only be accomplished by strengthening catalysis and oxidation. The digestive symptoms almost constantly observed early in the disease are anorexia and dyspepsia with hypochlorhydria. One of the principal stimulants of gastric and salivary secretions is the psyche. The diet should consequently be as varied as possible. The foods should be pleasing to smell, well prepared and of agreeable taste. To increase gastric acidity, hydrochloric or phosphoric acid may be given. The diet must be well balanced, both qualitatively and quantitatively. Rest of the organs is important; superalimentation must be avoided. Foods that may be allowed are raw or slightly cooked meat, liver, sweetbreads, spleen, kidneys, brains, fowl, fresh game, oysters, milk, eggs, soups with green vegetables, green vegetables, carrots, cereals, chestnuts, Gruyère cheese, sugar, honey, sweet fruit, figs, dates, raisins, preserves, apples, oranges, lemons, and wine. Foods to be prohibited are boiled and preserved meats, vinegar acid, condiments, lactic-acid milk, foods containing oxalic acid (celery, rhubarb, endive, cacao, tomatoes) asparagus, beer, tea, coffee, alcohol and carbonated beverages.—*Le régime alimentaire des tuberculeux. Quelques données pratiques, R. Monceux, Prog. Méd., December 25, 1926, no. 53, 2013.*—(*U. E. Z.*)

Exercise in Pulmonary Tuberculosis.—In the acute stages of pulmonary tuberculosis complete rest is advocated, with well-graded administration of exercise as condition permits. The exercise should aim to strengthen the heart and improve the nutrition of the tissues, as well as to regulate respiration and circulation. Definite fat and water loss does no harm, but may be beneficial, as is also increase of protein. Exercise is dependent upon the character, not upon the extent of the disease, and for this reason a complete inactivity of the disease process is not absolutely essential. Aside from graduated exercise, the use of occupational therapy for adults in sanatoria is highly recommended to make the transition to their former or new occupation easier. Respiratory and graded gymnastic exercises are serviceable. The consumptive under exercise is better suited to meet the economic requirements without pyrexia than those not thus trained. It is not believed advisable to discontinue exercise because the rectal temperature has attained 38°C. Periods of rest in a reclining position, alternated with the exercises, is advantageous, the rest intervals to be shortened toward the end of treatment.—*Zur Frage der Übung bei der Lungentuberkulose, A. Brecke, Beitr. z. Klin. d. Tuberk., 1926, lxv, 143.*—(*H. J. C.*)

Abortion in Pulmonary Tuberculosis.—It is known that approximately 20 per cent of all cases of inactive tuberculosis are unfavorably affected by pregnancy and its sequellae, while the same is true for 80 per cent of women with active tuberculosis. It would be ideal if it were possible to differentiate with certainty the prognostically favorable and unfavorable cases. The so called qualitative diagnosis has apparently not been of great help in such an attempt. The classification advocated by Sternberg affords the safest basis for prognostication in regard to pregnancy. Sternberg classifies pulmonary tuberculosis according to the static condition, that is, the anatomical extent of the lesions. In this respect he distinguishes three stages in essentially the same manner as Turban. The additional grouping is based on the dynamics of the disease, as follows: (1) practically healthy, (2) compensated, (3) subcompensated, and (4) decompensated. In this latter classification the patient's reaction toward his usual work is considered; only such patients who for at least two years have been able to work without revealing any symptoms belong to group 1. On the basis of Sternberg's classification 134 pregnant tuberculous women have been considered. The indication for abortion was deemed urgent in 55.9 per cent of these patients. All cases belonging to the second and third (anatomical) stage,

and all cases belonging the third and fourth (dynamic) group were aborted; besides these only two women in the first stage and in the second group were aborted.—*Zur Technik der Indikationsstellung zur Unterbrechung der Schwangerschaft bei Lungentuberkulose, P. Habetin, Wien. klin. Wchnschr., September 1, 1927, xl, 1108.*—(*M. P.*)

Abortion in Pulmonary Tuberculosis.—The artificial interruption of pregnancy in cases of manifest pulmonary tuberculosis gave favorable results when the pregnancy was in the first few months and the tuberculosis had not exceeded the Turban-II stage. Interruption of pregnancy in later months can still be beneficial. In the presence of laryngeal tuberculosis the fate of the woman is not definitely improved by abortion. The radical methods of artificial interruption (supravaginal amputation or total extirpation) do not give better results than the emptying of the uterus by the vaginal route. In cases in which the pregnancy has become manifest only during the last few months, and in the presence of a not definitely progressing pulmonary tuberculosis, abortion should be delayed at least until a living child can be delivered. If in the latter case it may not seem wise to carry the birth to term. The basic recommendation of interrupting pregnancy in every case of manifest tuberculosis is within reason.—*Zur Schwangerschaftsunterbrechung bei Lungentuberkulose, W. Schmitt, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 929.*—(*H. J. C.*)

Notes on Sanatorium Treatment.—The results of sanatoria would be far better if the patients could enter in less advanced stages. The long waiting period before admission is deplored. This could be considerably shortened provided satisfactory stations for observation existed. The actual sanatorium "cure" period should be at least six months, and often extended to one or one and one-half years. Sanatorium treatment can be reinforced by tuberculin treatment extended over years.—*Die Rolle der sozialen Faktoren in der Tuberkulosemortalität, zugleich Leitfaden im Kampfe gegen die Tuberkulose. II., W. v. Friedrich, Ztschr. f. Tuberk., 1926, xlv, 353.*—(*H. J. C.*)

Tuberculosis Sanatoria.—The number of beds in a sanatorium should not exceed 150 to 180. The sanatorium should be in a position to take care of severely ill cases as well as to treat surgical tuberculosis. The laboratories in a sanatorium must be able to perform the necessary bacteriological and serological, as well as metabolism tests.—*Die Tuberkuloseheilstätte: Ihr Betrieb, ihr Ziel. Zum 25 jährigen Bestehen der Deutschen Heilstätte Davos, H. Alexander, Beitr. z. Klin. d. Tuber., 1926, lxv, 112.*—(*H. J. C.*)

Results of Sanatorium Treatment in Germany and Switzerland Compared.—The limited treatment and poor selection of cases for the sanatorium in the past have made it impossible for this institution to exert much influence in the combat against tuberculosis. In Germany to-day a short average period, 90 days, of "cure" is the rule, as compared to an average of 163 days in Switzerland, making for better results in the latter case, with 31.1 per cent of the cases with positive sputum becoming closed, as against only 15 per cent in Germany. Another circumstance favoring better results in Switzerland is the fact that there the patients carry part of the burden of the cost of treatment, which leads to a greater personal interest in pursuing treatment properly. Climate and altitude constitute a third factor favoring better results in Switzerland.—*Die Bedeutung der Lungenheilstätte für die Tuberkulosebekämpfung in Vergangenheit und Zukunft, E. Peters, Beitr. z. Klin. d. Tuberk., 1926, lx, 6.*—(*H. J. C.*)

Ultimate Results of Sanatorium Treatment of Pulmonary Tuberculosis.—In the follow-up of 241 cases treated during the period of 1905–1908, 77 died and 41 were lost track of. Of 126 progressive cases there were 13 free from symptoms, 37 improved definitely, 16 improved, and 55 died; of 49 mildly active cases, 8 were free from symptoms, 14 definitely improved, 6 improved and 15 died. Among 69 per cent there was an improvement in the living conditions, in 43 per cent the financial conditions were satisfactory, and in 40 per cent they were very good.—*Bericht über Nachuntersuchungen Lungenkranker in der Fürsorgestelle der Stadt Bonn, R. Oeckinghaus, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 883.*—(*H. J. C.*)

Occupational Therapy.—With the opening of the new sanatorium at Wooley in Northumberland County England, though no special equipment had been provided for occupational therapy, it was early decided that some extra activities for patients could be developed. These activities first took the form of entertainment and social functions, which by reason of some well-staged theatricals became more than self supporting. A monthly magazine was next added, and then a general store. The project now took the added task of furnishing permanent work for ex-patients. Rabbit-farming and pig-raising were undertaken and quarters

constructed for the ex-patients caring for this work. As a result of this development of occupational activities, 22 ex-patients, of whom 15 still remain at work, have been wage-earners in the settlement. Seven left permanently, of whom two did not do well, but the others have done well since leaving. Those who remain may stay indefinitely and are all doing well.—*An Experiment in Occupational Therapy and a Result, J. B. McDougall, Tubercle, April, 1927, viii, 301.*—(*B. H. D.*)

Urban Workshops for Tuberculous Employees.—The urban workshop offers to the patient the advantages of employment without the necessity of moving himself and family from home and of subsequent occupation after training. The Speroleather workshop in London has been in operation for three years and employs only tuberculous individuals. The employees have, however, done remarkably well. The management has tried to do away with as many of the workers' sociological handicaps as possible, such as bad housing, overcrowding, periods of financial stringency, etc. Such matters are of the greatest importance. In the actual management of urban workshops, the choice of an administrative head who knows business methods and has authority, the choice of an occupation in which machinery can perform the bulk of the work and thus compensate for the physical limitations, the selection of some one having good advertising and selling methods,—these things make for either success or failure. Success will likewise follow a policy which first finds a market and then supplies it rather than one which merely makes an article and then goes out to sell it.—*Urban Workshops for Tuberculous Workers, N. D. Bardswell, J. State Med., December, 1926, xxxiv, 729.*—(*H. S. W.*)

Climate and Altitude in Treatment.—We know but little of the physiological effect of climate on the body. As regards tuberculosis it is well known that some cases do well in the plains and low altitudes and some do better in low and some in high mountains. The explanation of this fact has not as yet been given. The mountain climates, with snow and clear skies and beautiful sunny weather, have a tremendous psychic effect upon many patients, causing them to feel better and to want to try light occupations. Similarly, a foggy or windy climate may have quite another effect. Meterological conditions must surely play a part in altitude-treatment, and there are numerous locations in low mountains that are better for many patients than places in higher altitudes. It appears, however, that by and large, the cure of patients proceeds more rapidly in high altitudes. The response of the vasomotor apparatus to heat, cold and dampness doubtless has something to do with this.—*Zur Frage der Klimakuren für die Lungentuberkulösen, Margaret Levy, Deutsche med. Wchnschr., May 20, 1927, liii, 872.*—(*H. S. W.*)

Climatic and Hydromineral Treatment in Pulmonary Tuberculosis.—Few chapters of practical therapeutics have been the source of more controversy. The influence of climate has never been contested in principle, although opinions are discordant as to the best type of climate and are influenced by doctrines, fashions and interests. Experience is the best guide, provided it is the fruit of carefully accumulated observations. Mineral therapy must be secondary in importance to climatic therapy, few cases being suitable and the treatment being dangerous if injudiciously applied. In 1899, at the Congress of Berlin, Landouzy ventured a protest against the exclusiveness of the sanatorium cure in tuberculosis, and advocated the use of all reasonable therapeutic measures, such as marine, climatic, hydromineral and hygienic-dietetic cures. A knowledge of the clinical forms of the disease will serve as a guiding thread in phthisiological practice and help to avoid errors. The question of individual reaction is of prime importance and the old adage *primum non nocere* must be observed. One must also make accurate diagnoses, distinguishing from tuberculosis such maladies as chronic laryngitis and bronchitis, sequellae of pneumonia and corticopleuritis, chronic hepatization and pulmonary sclerosis, for which the indications and contra-indications are quite different from those in tuberculosis, and sulphurous thermal cures are especially beneficial, these being interdicted for tuberculosis. Hydromineral treatment, of which Landouzy was an ardent advocate, should be reserved for a small number of well-chosen tuberculosis patients, well observed during the course of treatment. Many of these springs are located in mountainous regions, as the Pyrenees and the Central European plateau. Altitude in itself is not suitable for all types of tuberculosis. For example, the often humid atmosphere of certain renowned Pyrenees resorts, and the harsh coldness, also damp, of certain heights of Auvergne, appear undesirable; and the 900 metres of Cauterets and the 1000 metres of Mont-Dôre are not as advantageous as other places at the same level. It is an illusion to think that the value of a site for the tuberculous is proportional to altitude above the sea. Besides,

many spring resorts, unsuitable for the tuberculous, are exceedingly valuable for non-tuberculous affections. Among such is Cauterets, which causes many tenacious cases of laryngitis and chronic bronchitis to yield but in incipient tuberculosis may initiate dangerous exacerbations. One must be acquainted with the special reactional aptitudes of the tuberculous. Another consideration is of a prophylactic nature. A physician has no right to direct contagious tuberculous patients to resorts frequented by masses of tourists, where no prophylactic measures are taken. Therefore it is well not to mix tuberculosis resorts and hydromineral stations or tourists' resorts. There are enough mountains and springs, given honest and intelligent supervision, to specialize according to conditions and serve each particular clientele. To mix these clienteles is foolish and unhygienic. *Climatic Treatment:* Experience shows the difficulty of formulating laws. However, it is possible to formulate a few general rules on the basis of observed facts. First, there is no specific climate for tuberculosis. Altitude has definite contraindications, such as very active forms of tuberculosis, febrile exacerbations, cardiovascular erethism, repeated haemoptyses, all of which do better at lower levels. However, in general, altitude furnishes climatic qualities suitable to the majority of the tuberculous. In this connection one must distinguish: *1: Slight altitudes*, up to about 600 metres, which differ little from the climate of the plains, being slightly cooler and less humid; in a hilly region of the plains, the hills often rise above the fog level and are preferable, the air also being fresher and purer. *2: Medium altitudes*, from 600 to 1500 metres, most propitious, combining the advantages of elevation without too great rarefaction; these advantages are lightness, purity and dryness of the air, insolation, atmospheric stability and absence of abrupt temperature variations; such a climate is tonic, stimulating and rehabilitating, and slight prolonged fever is no contraindication but is often benefited; chronic, slightly active tuberculosis, also incipient forms, respond well. *3: High altitudes*, over 1500 metres, seemingly less favorable for tuberculosis patients, because too exciting and capable of causing febrile exacerbations, insomnia, dyspnoea and digestive disorder; also dangerous in the presence of cardiovascular disease, especially with hypertension. *Analysis of Climatic Factors:* First, *temperature:* Certain tuberculous patients tolerate heat well, many more cold. Abrupt diurnal variations, however, are not generally well borne, except such as are due to cold coexisting with powerful solar radiations. Humidity is generally badly tolerated. Here one must distinguish atmospheric moisture from subsoil moisture, often associated with frequent rain and fog. With a dry porous soil hygrometric deviations seem less deleterious. Atmospheric instability, thermometric, hygrometric or barometric, affects the tuberculous greatly. Excessive movement of winds is disadvantageous, while high luminosity is favorable. The effect of the impinging of the solar rays on the skin are well known and applied to "external tuberculosis," and some have proposed or adopted their extension to pulmonary tuberculosis, among them Rollier, Malgat and Hervé. In general it seems that bacillary localizations, characterized by torpidity and apyrexia, may be successfully treated, and this would indicate certain torpid cases of pulmonary tuberculosis without general reaccion. Most patients with pulmonary tubertulosis are unsuitable subjects and in them there may be provoked active exacerbations, often severe, and constitutional reactions. *Marine Climates:* These are generally admitted to be favorable for so called "surgical" tuberculosis, such as the peritoneal, osseo-articular and lymphatic forms, all preferably designated as *local tuberculosis*, without constitutional reaction, but they may be pernicious for pulmonary tuberculosis. Actually physicians and hygienists should differentiate, as Loir has done, between marine and maritime climates, the first being that of the open sea, the second of the littoral. Their qualities are quite different. Marine climates are notable for stability, in contrast to maritime climates. The latter are generally therefore harmful for those with pulmonary tuberculosis, being too stimulating, and suitable only for those with lesions of the torpid or local type. A few littoral climates, such as that of the Riviera, are exceptions, but, generally speaking, febrile or haemoptoic cases should avoid the sea-coast. The truly marine climate has more to recommend it, and English writers still maintain the value of sea voyages, extolled by the ancients. In more recent times the prevalence of tuberculosis among sailors has not seemed to fit in with this conception, but here poor hygienic conditions, and not climate, must be indicted. Bernard has frequently noted in the case of patients coming from America, especially South America, a marked improvement during the voyage with lowered temperature returning appetite and gain in weight. *Selection of a Climate for the Tuberculous:* First of all, it may be said that life in the large cities does not agree with them. The air is too impure and polluted; life is too shut in and confined; the atmosphere is heavy and

humid, and often overheated indoors. Outside of cities, wooded regions are to be recommended, especially for sanatoria, as they are more protected from wind and heat, but the dwellings should not be immediately surrounded by trees. In France the following regions may be said to be unfavorable: the entire north and east, excepting the Vosges and Jura country. The basin of the Sione, especially Ile-de France can be utilized, and several excellent sanatoria are located here. The basin of the Loire, especially where it issues from the mountains, and also its estuary from Nantes to the sea, is damp, and the atmosphere humid. Lower Normandy, the Marne, and Brittany (except the elevated and wooded portion of Finisterre), and the region of La Vendée, are unfavorable. The Rhone valley is too subject to winds. On the other hand, the "massifs" of the Vosges, Jura and Alps, the central plateau, and the Pyrenees are especially suitable, if certain damp valleys and exposed elevations be avoided. The French Alps, especially the maritime Alps, and Provence, provide a climate in every way as valuable as that of the Swiss Alps. In Savoy and le Dauphiné are very fine locations for sanatoria at an altitude. The regions of Briançon and Barcelonette are especially recommended. The regions of the Pyrenees may be subdivided into three regions: *1:* the eastern, comparable to the high Provencal Alps. Here are the high valleys of the Tet, Tech and Ande, the stations of Vernet and Amélie, and the high plateaus of Cerdagne and Mont Louis. *2:* The central, also high and suitable. *3:* The western, possessed of a sedative climate. Pan and Cambo are suitable for erethistic, congestive and nervous types and those with febrile tendency. Finally there is the region of Arcachon, a sort of wooded marine-lake region, with an attenuated marine climate. The Mediterranean coast, or French Riviera, enjoys a traditional and established reputation for tuberculous invalids, but the climate of this entire littoral is not the same. The western portion, between Marseilles and the Maures massif, including Hyeres, is not to be recommended, as it is too stimulating and exposed to the north winds. The zone of the Maures and the Estiral is less exposed, but it possesses some of these features to a lesser degree. It is the eastern part, from Cannes to the Italian coast, which is especially favored. It is characterzed by mildness, dryness and high luminosity, especially beneficial to debilitated, bronchitic and emphysematous tuberculous patients. The chief inconvenience is the abrupt cooling of the air at sundown. This is less pronounced if one seeks the hilly country back of the coast. It is again emphasized that climate is merely an optimum medium for applying the hygienic-dietetic treatment, the only one outside of artificial pneumothorax, which is available. *Location of sanatoria:* These should be at a proper distance from cities or large towns, near enough for access to medical facilities and intercourse with civilization, but far enough so that patients will not be drawn to frequent cabarets, amusement halls, etc. Industrial centres should not be closer than a distance of 10 kilometres. The location should be neither at the bottom of a valley nor on a bare plateau, but preferably on the side of a hill, or, if in a level country protected by trees. It should never be exposed to the prevailing winds, and shoud be at least several hundred yards from the shore if near any considerable body of water. There should be plenty of grounds laid out like a park, dry underfoot, and preferably a vegetable garden. *Hydromineral therapy:* There is truly a place for this and definite indications and requirements. Tuberculosis patients, who have a caseous circumscribed pulmonary lesion, in good general condition and without constitutional reaction, with or without bronchial catarrh, do well at the classic resort of Eaux-Bonnes. This station is at an altitude of 750 metres. Erethistic cases which tend to constitutional reactions are preferably sent to Amélie-les Bains or Le Vernet, milder and more protected. Fibrotic phthisical patients, apyretic and well-nourished, but perhaps dyspnoeic, do well at Mont-Dôre, but only those who are well-educated and disciplined should be sent there. Asthmatics and spasmophiliacs are almost always benefited there. Children with gangliopulmonary tuberculosis are divided into two groups, febrile and afebrile. The former do best in the mountains, the latter at the seashore, especially the Channel and Basque coasts. For those with anaemia and wasting, and possibly slight febrile exacerbations, La Bourboule or Saint-Honoré are advised, or Morvan, at an elevation of 300 metres. France is indeed exceptionaly endowed with natural therapeutic resources which need only to be properly utilized.—*Les cures climatiques et hydro-minérales chez les tuberculeux pulmonaires, L. Bernard, Rev. d. l. Tuberc., February, 1926, cii, 54.—(A. P.)*

Treatment of Tuberculosis in Allergen-Free Chambers.—Climate is unquestionably influential in the treatment of tuberculosis, and in a great variety of climates of different altitude, amount of sunshine, etc., the influence is favorable. The only factor common to all these climates

is purity of air. Previous results have shown that the condition of asthmatics can be noticeably improved by keeping them in purified, allergen-free air. The authors tested the effect of the same factor in patients with pulmonary tuberculosis, by keeping them in allergen-free chambers, ventilated with purified air. The majority of these patients did not have symptoms of asthma. The environment outside the chambers was moist, and the building itself poorly built. Of 16 patients under these conditions, 14 improved, with increase in weight in each case. Out of eight with fever seven experienced a drop in temperature. All coughed less, and their respiration was easier. The amount of sputum was, as a general rule, decreased. Expectoration ceased in one patient in whom there was X-ray evidence of cavities. These results were achieved without varying the amount of rest or nourishment, from the previous routine in which progress had not been so favorable. It has not yet been determined whether the improvement thus brought about is lasting, but it is emphasized that the favorable changes noted can be obtained by proper technical care even in a private dwelling.—*Ueber die Behandlung von Lungentuberkulose in Allergenfreien Kammern, W. S. van Leeuwen and W. Kremer, München. med. Wchnschr., April 22, 1927, lxxiv, 662.—(E. R. L.)*

Treatment with Tuberculin.—Tuberculin has the property of utilizing the allergic reaction in healing. It stimulates the defensive inflammatory response and aids in walling off infected areas. In early cases, devoid of a tendency to spontaneous healing tuberculin is especially valuable. The ideal cases for tuberculin treatment are those with limited areas of involvement in which fibrosis predominates. In its property of fortifying an already established immunity and utilizing the allergic response in the formation of fibrosis lies the main therapeutic value of tuberculin.—*The Rational Basis for Tuberculin Therapy, F. M. Pottenger, Brit. M. J., July 9, 1927, no. 3470, 55.—(W. I. W.)*

Subepidermal Tuberculin Treatment of Pulmonary Tuberculosis.—The Sahli subepidermal tuberculin treatment, controlled by the sedimentation reaction and haemogram, was used on 56 cases. The method has the advantage over earlier methods in that its cautious use makes it possible to prevent all harmful effects. The technique is not entirely simple or time-saving. The suitable cases for treatment are all those with poor allergy or those productive-cirrhotic, afebrile cases of tuberculosis that are free from complications. Pure exudative cases must be excluded.—*Unsere Ergebnisse mit der subepidermalen Tuberkulinbehandlung nach Sahli bei Lungentuberculose, Becker, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 630.—(H. J. C.)*

Subepidermal Tuberculin Treatment of Pulmonary Tuberculosis.—Various types of percutaneous treatment with irritants were used in pulmonary tuberculosis. The Sahli subepidermal method is recommended. Even with relatively short periods of treatment favorable results were obtained by it, whereas other methods were of no avail. The Sahli subepidermal method also has the advantage that the course of the skin reaction can be definitely observed.—*Die Vorteile der spezifischen percutanen und intracutanen (subepidermalen) Behandlung der Lungentuberkulose, K. Kerssenboom, Beitr. z. Klin. d. Tuberk., 1926, lxiii, 515.—(H. J. C.)*

Treatment of Pulmonary Tuberculosis with "Ertuban."—*Ertuban* consists of an extract of living human tubercle bacilli in sterile distilled water, the entire solution being passed through a Berkefeld filter. It exerts a specific influence on tuberculous guinea pigs, whether administered intracutaneously or by the intestinal tract. The preparation has been used therapeutically in 246 patients, most of whom are still under observation and treatment. Two years have elapsed since the first treatments were instituted. Although this period is too short for final deductions, certain interesting observations have been gleaned from the experience which are worth recording. It may be stated that the product is of benefit to none except fibroproductive cases in the first and second stages (Turban), but that in these it yields decided benefits which resemble those following treatment with Old Tuberculin. Eighty per cent of the 246 patients showed clear evidence of improvement. Exudative third-stage cases do badly with the treatment.—*Erfahrungen über die Behandlung der Lungentuberkulose mit Ertuban, E. Schuntermann, Deutsche med. Wchnschr., March 25, 1927, liii, 525.—(H. S. W.)*

"Tebeprotin" (Toenniessen) in Sanatorium Practice.—Satisfactory results are reported from the use of *tuberculoprotein Toenniessen* in the treatment of old cirrhotic types of phthisis, even in the presence of cavities.—*Das Tuberkuloprotin (Toennies-*

sen) in der Heilstättenpraxis, F. Loben, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 72.—(H. J. C.)

Treatment of Tuberculosis with "Tuberculomucin."—The authors found the *Tuberculomucin* of Weleminsky to have a greater range of applicability in the treatment of pulmonary tuberculosis than any tuberculin. Even in early predominantly exudative cases favorable results were obtained. Toxic injury was not noted.—*Beitrag zur Tuberkulosetherapie mit Tuberculomucin, H. Zemmin and K. Wille, Beitr. z. Klin. d. Tuberk., 1926, lxiv, 679.—(H. J. C.)*

Treatment of Tuberculosis with Methylic Antigen.—It has been demonstrated by Boquet and Nègre that the phosphorus-containing lipin of the tubercle bacillus, extracted with methyl alcohol, exerts a definitely favorable influence on the evolution of experimental tuberculosis. For therapeutic use the alcoholic extract is mixed with water and heated *in vacuo* until all the alcohol is removed. This watery suspension is distributed by the Pasteur Institute in Paris. The antigen has been used by various workers in the treatment of tuberculosis of the skin, mucous membranes, larynx, lymph nodes, bones and joints, peritoneum, urogenital tract, eye and lungs. According to their reports it has an indisputably beneficial effect, which is particularly evident in lesions of the skin, mucous membranes, lymph nodes, bones and joints, and peritoneum. The effect on pulmonary lesions is less definite, but encouraging. Its use is much less dangerous than that of tuberculin, because it provokes severe local, focal or general reactions only very rarely.—*L'antigène méthylique et son action sur les differentes manifestations de l'infection tuberculeuse, J. Valtis, Prog. Méd., July 9, 1927, no. 28, 1073.*—(*M. P.*)

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